

memoir upon the gigantic Tortoises. One may therefore be astonished at finding in this region an animal of comparatively large size belonging to this group, and the characters of which do not allow of its being confounded with any other species of the genus. It is to one of our most zealous travellers, M. Humblot, that the Museum is indebted for this curious Chelonian. That naturalist, who was in possession of seven individuals of it, informs us that the present one, which is of the size of a large *Testudo radiata*, was not the largest, some of them being of nearly twice its dimensions.

The carapace is convex, generally hemispherical, with the anterior and posterior orifices not much raised, resembling that of *Testudo radiata*, Shaw. The dorsal shield presents a slight constriction in front, and is rounded behind; there is a nuchal shield, although it is very small. The form of the plastron particularly characterizes this species. The gular plate, instead of being double, as is usually the case in the Tortoises properly so called, is simple, as in the few species of which Gray proposed to form the genus *Chersina*; this, however, is only observed on the lower surface; on the upper surface there is a groove, an indication of the usual division. This plate and the bony part which supports it, distinct from the rest of the plastron, form a flattened, triangular process, twice as long as the width of its base, and bent from below upwards, a peculiar arrangement, the singularity of which struck M. Humblot, who observed it in his seven individuals.

The colour of the dorsal shield is yellowish red, with brown tints upon the periphery of the scaly plates of the disc and on the limb; the plastron, which is uniformly straw-yellow, shows some traces of a darker tint towards the margin of the abdominal plates. In fact the general coloration partakes at once of those observed in *Testudo radiata*, Shaw, and *Testudo (Chersina) angulata*, Dum.

These characters enable us at the first glance to distinguish this Chelonian from the other known true Tortoises; I propose to name it *Testudo yniphora*, in allusion to the peculiar form of the anterior part of the plastron.

Although the origin of this species cannot be precisely fixed, we may nevertheless regard it as certain, from the information furnished by the Arab sailors who sold these Tortoises to M. Humblot at the Great Comoro, that these animals had been captured upon an islet situated north-north-east of that place; moreover, considering the prevailing winds at the time, and the method of navigation adopted by these men, their vessel could only have come from this direction, that is from a locality situated towards Aldabra, perhaps even a dependency of that group of islands, where we know of such curious representations of the family Chersites.—*Comptes Rendus*, August 10, 1885, p. 440.

*Orientation of the Embryo and Formation of the Cocoon in
Periplaneta orientalis.* By M. P. HALLEZ.

M. Hallez finds that each of the sixteen ovigerous tubes in *Periplaneta orientalis* contains a chaplet of ova gradually passing

down the tube towards the point of exit. He finds that throughout the organic axis of the ovum is parallel to the axis of the body of the parent, and, further, that the pole of the ovum which is directed towards the narrow part of the ovigerous tube, *i. e.* towards the head of the mother, is the cephalic pole of the ovum. The maturation of the ova goes on approximately *pari passu* in all the tubes, so that at a given moment each tube presents a mature ovum placed close to the calyx or oviduct, and oviposition and the formation of the cocoon are then imminent. He describes the latter process as follows:—

“The seric glands, as Léon Dufour calls them, form at this period a voluminous bundle ventrally situated and composed of very long tubes, coiled together, bifid and multifid. These tubes are filled with an opaque, readily coagulable substance, in which are disseminated an infinite number of crystals. They are prisms with a rhombic base, presenting a small rectangular facet of truncature in place of the projecting edges. They measure, on the average, 15μ , are insoluble in water and in weak nitric acid; they are, on the contrary, destroyed without any disengagement of gas by concentrated sulphuric acid; and caustic potash dissolves them still more rapidly. These crystals are destined to the construction of the cocoon, which is formed by an assemblage of these crystals cemented by the coagulated substance in the midst of which they have originated.

“This cocoon, which Léon Dufour compares to a small, closed valise, is ovoid and presents a denticulated crest which is the line of dehiscence. The posterior extremity (that which issues first at the moment of delivery) is generally a little the thicker; the other is easily recognizable owing to the presence of a sort of small hilum. The line of dehiscence is superior, consequently corresponding to the dorsal surface of the insect. The eggs, sixteen in number, are arranged in two rows vertically in this cocoon; finally, in more than 100 cocoons that I have examined I have always found the heads of all the embryos directed towards the line of dehiscence.

“I have had the opportunity of observing directly the fabrication of the cocoon and the arrangement of the eggs in its interior. The two oviducts debouch a little in front of the subgenital plate at the superior level of the genital armature which is essentially formed of two episternites and of a sternite with two biramose branches. The whole forms a sort of funnel or speculum with four mobile branches, and placed obliquely from in front backwards, and from above downwards. The egg coming from the oviduct falls into this funnel, which seizes it and places it side by side with those previously laid; at the same time, by the combined mechanism of the walls of the genital sac and the pieces of the armature, the coagulable matter and its crystals are uniformly spread and take the form of the cocoon. The line of dehiscence is produced by a pressure exerted by the superior part of the sternite and perhaps also by the groove of the tergite of the anal segment. The cocoon is moreover supported beneath by the subgenital plates.”

The egg always falls into the genital armature with the caudal pole downwards.—*Comptes Rendus*, August 10, 1885, p. 444.